

GRE_106US_Seq_ST25_2_Revised_9_1_09
SEQUENCE LISTING

<110> GREINER BIO-ONE GMBH
Kranewitter, Wolfgang
Mittermayr, Christian
Winner, Florian
Iftner, Thomas

<120> PRIMERS AND PROBES FOR DETECTING GENITAL HPV GENOTYPES

<130> GRE-106US

<140> 10/582,393
<141> 2004-12-07

<150> DE 103 57 677.0
<151> 2003-12-10

<160> 137

<170> PatentIn version 3.5

<210> 1
<211> 25
<212> DNA
<213> Human papillomavirus

<220>
<221> misc_feature
<222> (6)..(6)
<223> n is a, c, g, or t

<400> 1
cargcnaaaw wwktdaarga ytgtg 25

<210> 2
<211> 25
<212> DNA
<213> Human papillomavirus

<220>
<221> misc_feature
<223> r is a or g; k is t or g; n is a, t, g, or c

<220>
<221> misc_feature
<222> (6)..(6)
<223> n is a, c, g, or t

<400> 2
cargcnaaat atktraaaga ttgtg 25

<210> 3
<211> 25
<212> DNA
<213> Human papillomavirus

<220>

<221> misc_feature
 <223> r i s a o r g ; w i s t o r a

 <400> 3
 cargcaaaat atgtwaagga ttgtg 25

 <210> 4
 <211> 25
 <212> DNA
 <213> Human papillomavirus

 <220>
 <221> misc_feature
 <223> r i s a o r g ; w i s t o r a

 <400> 4
 cargcwaaaa ttgtaaarga ttgtg 25

 <210> 5
 <211> 25
 <212> DNA
 <213> Human papillomavirus

 <400> 5
 caagcaaaaa tagtaaarga ctgtg 25

 <210> 6
 <211> 25
 <212> DNA
 <213> Human papillomavirus

 <400> 6
 cargcaaaat atgtaaaaga ctgtg 25

 <210> 7
 <211> 23
 <212> DNA
 <213> Human papillomavirus

 <400> 7
 aryggytsya rccaaaartg rct 23

 <210> 8
 <211> 30
 <212> DNA
 <213> Human papillomavirus

 <400> 8
 aagctttcta ggaggtacag ttattagtca 30

 <210> 9
 <211> 30
 <212> DNA
 <213> Human papillomavirus

 <400> 9

ataaaacata ggggttctaa aatagaaggc 30

<210> 10
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 10
 actaaagttg acagtgtagg taactggaag 30

<210> 11
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 11
 ttaaacaatg gattaagtat aggggtacta 30

<210> 12
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 12
 aaaagatgtc tattaaacaa tggattaagt 30

<210> 13
 <211> 29
 <212> DNA
 <213> Human papillomavirus

<400> 13
 gggactactaaa gttgacagtg taggtaact 29

<210> 14
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 14
 gggaacagtt attagttatg ttaattcctg 30

<210> 15
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 15
 aattgtatag ccattgtagg gccacctgac 30

<210> 16
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 16

gggccacctg acactgggaa gtcgtgcttt 30

<210> 17
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 17
 gggccacctg acactgggaa gtcgtgcttt 30

<210> 18
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 18
 tgatggaggt gattggaagc aaattgttat 30

<210> 19
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 19
 tgaaatttct gcaaggtct gtaatatgtt 30

<210> 20
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 20
 atggaggatga ttggaagcaa attgttatgt 30

<210> 21
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 21
 gaccaatagt gcaattcctg cgataccaac 30

<210> 22
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 22
 caaacattat aggcgagccc aaaaacgaca 30

<210> 23
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 23

tcctgcgata ccaacaaata gagtttataa	30
<210> 24	
<211> 28	
<212> DNA	
<213> Human papillomavirus	
<400> 24	
ctgcgatacc aacaaataga gtttataa	28
<210> 25	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 25	
agaaacgatc tatgtgtatg tcacaatggc	30
<210> 26	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 26	
agaagagggc gggtcgtgga aggaaattgc	30
<210> 27	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 27	
ggcgggtcgt ggaaggaaat tgccaaattt	30
<210> 28	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 28	
gcacagaaac gatctatgtg tatgtcacia	30
<210> 29	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 29	
gtagatgtga caaagttagt gacgaagggtg	30
<210> 30	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 30	

tgagccttat tagcttttta caaggatgta	30
<210> 31	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 31	
caaagttagt gacgaagggtg actggagggga	30
<210> 32	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 32	
acagttttta aaagggtgtg ttatatcatg	30
<210> 33	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 33	
gggtgtgtta tatcatgtgt aaattctaaa	30
<210> 34	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 34	
aaagggtgtg ttatatcatg tgtaaattct	30
<210> 35	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 35	
attacacata gatgtgattt aatagatgat	30
<210> 36	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 36	
tttaatgcag tttatgcaag gtgtgggttat	30
<210> 37	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 37	

tgatttaata gatgatggag gaaactggaa	30
<210> 38	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 38	
tgcagtttat gcaaggtgtg gttatttcac	30
<210> 39	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 39	
ttaatagatg atggaggaaa ctggaaacac	30
<210> 40	
<211> 28	
<212> DNA	
<213> Human papillomavirus	
<400> 40	
aggtggacga tgacggtgac tggaggga	28
<210> 41	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 41	
gcatttccta caaggagcta ttatataccta	30
<210> 42	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 42	
aaggcaaatg tccatgtctc aatggataaa	30
<210> 43	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 43	
tgtaaacatt acaagcgagc acaaaaaagg	30
<210> 44	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 44	

agccttatgc attttttaca gggcacagtt 30

<210> 45
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 45
 tatttcatat gtaaactcca ccagccactt 30

<210> 46
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 46
 aatttaggtg tagtaaattg gatgaaggcg 30

<210> 47
 <211> 27
 <212> DNA
 <213> Human papillomavirus

<400> 47
 gaagtgtgat gaaggcgact ggaaacc 27

<210> 48
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 48
 gaatgagcct gatgcacttt atgcaaggta 30

<210> 49
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 49
 cctgatgcac tttatgcaag gtacaataat 30

<210> 50
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 50
 tccatgtgca aacactatag gttagcagaa 30

<210> 51
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 51

acaaatgaga cgtatgtcta tgggtgcatg	30
<210> 52	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 52	
gacgtatgtc tatgggtgca tggataaaac	30
<210> 53	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 53	
cagtaaattt gaagacacag gaaattggaa	30
<210> 54	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 54	
ggcactgtaa ttagttatgt aaactccagc	30
<210> 55	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 55	
atatgaaaca gtggataaaa tttaggagca	30
<210> 56	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 56	
acgccaaatg aatatgtctc aatggattaa	30
<210> 57	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 57	
cgccaaatga atatgtctca atggattaa	30
<210> 58	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 58	

tttaagggca ctaaaggaat ttcttaaagg	30
<210> 59	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 59	
ggtgcaataa tatcatttgt aaattcaaac	30
<210> 60	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 60	
ggcactaaag gaatttctta aaggaacacc	30
<210> 61	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 61	
agggcactaa aggaatttct taaaggaaca	30
<210> 62	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 62	
cattatctat gtcagcctgg ataaggtata	30
<210> 63	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 63	
gcacaaagaa aatcattatc tatgtcagcc	30
<210> 64	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 64	
aaatcattat ctatgtcagc ctggataagg	30
<210> 65	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 65	

aaacatatga atattggaca atggatacag	30
<210> 66	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 66	
gaaagaaaac atatgaatat tggacaatgg	30
<210> 67	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 67	
ttaattaggt tcttaagtgg atgtgtaata	30
<210> 68	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 68	
taaagcatgt atgtagcaag gtggatgatg	30
<210> 69	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 69	
gatgaatatg aaacaatgga taaagcatgt	30
<210> 70	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 70	
aagcatgtat gtagcaaggt ggatgatggt	30
<210> 71	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 71	
gttatttatg gtcctccaaa cacgggtaaa	30
<210> 72	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 72	

GRE_106US_Seq_ST25_2_Revised_9_1_09		
aaacaatgga taaagcatgt atgtagcaag		30
<210> 73		
<211> 30		
<212> DNA		
<213> Human papillomavirus		
<400> 73		
ttagttattt atggtcctcc aaacacgggt		30
<210> 74		
<211> 30		
<212> DNA		
<213> Human papillomavirus		
<400> 74		
ttagcttttt aggaggtgta gtgctatcat		30
<210> 75		
<211> 30		
<212> DNA		
<213> Human papillomavirus		
<400> 75		
ttgtgattta gtagaggagg aaggtgagtg		30
<210> 76		
<211> 30		
<212> DNA		
<213> Human papillomavirus		
<400> 76		
cgttgtagatt tagtagagga ggaaggtgag		30
<210> 77		
<211> 30		
<212> DNA		
<213> Human papillomavirus		
<400> 77		
catcgttgtg atttagtaga ggaggaaggt		30
<210> 78		
<211> 30		
<212> DNA		
<213> Human papillomavirus		
<400> 78		
gggcacaaca gcaacaaatg aatatgtgcc		30
<210> 79		
<211> 30		
<212> DNA		
<213> Human papillomavirus		
<400> 79		

cacaacagca acaaataaat atgtgccagt 30

<210> 80
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 80
 ctgttttgga ctttgtggac cgccaaatac 30

<210> 81
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 81
 tttcaagggt ctgtcatttc atttgtgaat 30

<210> 82
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 82
 acatttttta aaaggatgca ttatttcata 30

<210> 83
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 83
 cgtggtatga caatgggaca atggatacaa 30

<210> 84
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 84
 gagcagaaaa gcgtggtatg acaatgggac 30

<210> 85
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 85
 aggatgcatt atttcatatg taaattccaa 30

<210> 86
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 86

aaagcgtggt atgacaatgg gacaatggat 30

<210> 87
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 87
 agcctgctac attttttaca aggaactgta 30

<210> 88
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 88
 gattacacat agaggccgca aggtggcaga 30

<210> 89
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 89
 attacacata gaggccgcaa ggtggcagac 30

<210> 90
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 90
 agtggattac acatagaggc cgcaaggtgg 30

<210> 91
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 91
 acagtggatt acacatagag gccgcaaggt 30

<210> 92
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 92
 gtaccattta ttagtgcct taaattgttt 30

<210> 93
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 93

ttacggacca agcgacacag ggaagtcgct	30
<210> 94	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 94	
tacggaccaa gcgacacagg gaagtcgcta	30
<210> 95	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 95	
gagccttata aattttttcc aagggtcagt	30
<210> 96	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 96	
ccttataaat tttttccaag ggtcagtcac	30
<210> 97	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 97	
attacaaaag ggcacagcaa cagcaaatga	30
<210> 98	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 98	
atggaggaga ctggagaaca atagtaaagc	30
<210> 99	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 99	
aagttgtatg gtaatatgcg gaccaccaaa	30
<210> 100	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 100	

caaggatgtg taatatcata tgtaaacgcc	30
<210> 101	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 101	
aggagactgg agaacaatag taaagctatt	30
<210> 102	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 102	
gttgtatggt aatatgcgga ccaccaaaca	30
<210> 103	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 103	
aacgacaaat gtcaatgccg caatggatta	30
<210> 104	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 104	
cgggcacaaa aacgacaaat gtcaatgccg	30
<210> 105	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 105	
tcaatgccgc aatggattaa atttagatgc	30
<210> 106	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 106	
atggcgcaat ggattaggtt tagatgtgat	30
<210> 107	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 107	

aaatgactat ggcgcaatgg attaggttta 30

<210> 108
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 108
 attaggttta gatgtgataa atgtgacgat 30

<210> 109
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 109
 taaatttata caaggtgtag ttatttcgta 30

<210> 110
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 110
 atgtgattta actaatgatg gtggaattg 30

<210> 111
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 111
 taatgatggt ggtaattgga aagatattgt 30

<210> 112
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 112
 taaacaaatg tcaatggcac aatggatata 30

<210> 113
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 113
 ttaattagat ttttgcaagg gtgcgttatt 30

<210> 114
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 114

GRE_106US_Seq_ST25_2_Revised_9_1_09

agaaaatcac taacaatgtc agcatggatt 30

<210> 115
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 115
 taggtataga tgtgacaaag tgcaagacgg 30

<210> 116
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 116
 ttgcgatacc aggggtattaa ctttatgtat 30

<210> 117
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 117
 gaggtacagt tattagtcatt gtaaattcca 30

<210> 118
 <211> 32
 <212> DNA
 <213> Human papillomavirus

<400> 118
 taagtttttg gggggaacag ttattagtta tg 32

<210> 119
 <211> 34
 <212> DNA
 <213> Human papillomavirus

<400> 119
 ttatacactt tatacaagga gcagtaatat catt 34

<210> 120
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 120
 caaggatgta taatatcata tgcaaattca 30

<210> 121
 <211> 35
 <212> DNA
 <213> Human papillomavirus

<400> 121

tgagtttaat aaacttctta gcaggaactg taata	35
<210> 122	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 122	
aggcgtacc atattatcat atgtaaagtc	30
<210> 123	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 123	
ggaggcactg taattagtta tgtaaactcc	30
<210> 124	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 124	
gagttttata catttcctac aaggtgcaat	30
<210> 125	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 125	
tatttgcaat gaggcctaag aagtttatgc	30
<210> 126	
<211> 32	
<212> DNA	
<213> Human papillomavirus	
<400> 126	
gagtttaatt aggttcttaa gtggatgtgt aa	32
<210> 127	
<211> 29	
<212> DNA	
<213> Human papillomavirus	
<400> 127	
gtttagttat ttatggctct ccaaacacg	29
<210> 128	
<211> 30	
<212> DNA	
<213> Human papillomavirus	
<400> 128	

agtccttataa agtttttttca aggggtctgtc 30

<210> 129
 <211> 32
 <212> DNA
 <213> Human papillomavirus

<400> 129
 tgagcctgct acattttttta caaggaactg ta 32

<210> 130
 <211> 27
 <212> DNA
 <213> Human papillomavirus

<400> 130
 tgagccttat aaatttttttc caagggt 27

<210> 131
 <211> 32
 <212> DNA
 <213> Human papillomavirus

<400> 131
 atacatttct tgcaaggcac aataatttca ta 32

<210> 132
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 132
 tgagtcttat acatttcttg caaggcacia 30

<210> 133
 <211> 30
 <212> DNA
 <213> Human papillomavirus

<400> 133
 aatgcacttt ttacaaggta cagtaatttc 30

<210> 134
 <211> 32
 <212> DNA
 <213> Human papillomavirus

<400> 134
 tttaaatttat acaagggtgta gttatttcgt at 32

<210> 135
 <211> 26
 <212> DNA
 <213> Human papillomavirus

<400> 135

GRE_106US_Seq_ST25_2_Revised_9_1_09
taattagatt ttgcaaggg tgcgtt 26

<210> 136
<211> 25
<212> DNA
<213> Human papillomavirus

<220>
<221> misc_feature
<222> (6)..(6)
<223> n = inosine

<400> 136
cargcnaaaw wwktdaarga ytggtg 25

<210> 137
<211> 25
<212> DNA
<213> Human papillomavirus

<220>
<221> misc_feature
<222> (6)..(6)
<223> n = inosine

<400> 137
cargcnaaat atktraaaga ttgtg 25